

Appl. No. 10/047,024

Brief

Brief following Notice of Appeal dated 23 January 2006

Page 1 of 16



AF ^{TRW}

**IN THE UNITED STATES PATENT AND TRADEMARK
OFFICE BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Appl. No. : 10/047,204
Appellant(s) : WIELSTRA, Ytsen, et al.
Filed : 15 January 2002
Title : METHOD OF PREPARING A LACQUER
COMPOSITION
TC/A.U. : 1712
Examiner : METZMAIER, Daniel S.
Atty. Docket : NL010052

**CERTIFICATE OF MAILING OR
TRANSMISSION**

I certify that this correspondence is being:

☒ deposited with the U.S. Postal
Service with sufficient postage as first-
class mail in an envelope addressed to:
Board of Patent Appeals & Interferences
United States Patent & Trademark Off.
P.O. Box 1450
Alexandria, VA 22313-1450

☐ transmitted by facsimile to the
U.S. Patent and Trademark Office at 571-
273-8300.

On: March 21, 2006

By: John C Fox

APPELLANT'S APPEAL BRIEF

Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

BRIEF OF APPELLANT

This Brief of Appellant follows a Notice of Appeal, dated
23 January 2006, appealing the decision dated 4 November 2005,
of the Examiner finally rejecting claims 1-11 of the
application. All requisite fees set forth in 37 CFR 1.17(c) for
this Brief are hereby authorized to be charged to Deposit

Account No. 501,850.

03/29/2006 CNGUYEN2 00000100 501850 10047204

01 FC:1402 500.00 DA

C:\PROFESSIONAL\PhilipsAMDS2006\PHNL010052brief.doc

Copied from 10047204 on 08/31/2006

REAL PARTY IN INTEREST

The real party in interest in this appeal is the assignee of all rights in and to the subject application, Koninklijke Philips Electronics, N.V. of The Netherlands.

RELATED APPEALS AND INTERFERENCES

To the best of the knowledge of the undersigned, no other appeals or interferences are known to Appellants, Appellants' legal representatives, or assignee which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

STATUS OF CLAIMS

Of the original claims 1-24, claims 1-11 were amended and claims 12-24 were cancelled. Claims 1-11 now stand finally rejected as set forth in the final Office Action dated 4 November 2005, and are the subject of this appeal.

STATUS OF AMENDMENTS

No amendments were offered subsequent to the final Office action. All amendments have been entered.

SUMMARY OF THE CLAIMED SUBJECT MATTER

The present invention relates to a method of preparing a lacquer composition, said method comprising the steps of mixing together an organosilane compound and silica particles under basic conditions. The invention also relates to a lacquer composition which is obtainable by the method according to the invention, as well as to a method of applying a lacquer coating to a substrate. (specification, page 1, lines 1-5)

According to a first aspect of the invention, a method for producing a lacquer composition comprises the step of adding silica particles to a reaction mixture comprising a first organosilane compound and a metal alkoxide under basic conditions, resulting in a lacquer composition containing silica particles. (claim 1; specification: page 1, lines 1-3, 26-28)

According to one embodiment of the first aspect of the invention, the metal alkoxide is a zirconium alkoxide, an aluminum alkoxide, a titanium alkoxide or a mixture thereof. (claim 2; specification: page 2, lines 15 and 16)

According to another embodiment of the first aspect of the invention, the metal alkoxide is a metal diketonate. (claim 3; specification: page 2, line 17)

According to another embodiment of the first aspect of the invention, the first organosilane compound is an epoxysilane. (claim 4; specification: page 2, line 20)

According to another embodiment of the first aspect of the invention, the epoxysilane is 3-glycidyloxypropyltrimethoxysilane. (claim 5; specification: page 2, line 20)

According to another embodiment of the first aspect of the invention, at least a second organosilane compound is added to the reaction mixture. (claim 6; specification: page 2, lines 22 and 23)

According to another embodiment of the first aspect of the invention, the second organosilane compound comprises a tetra-alkoxysilane. (claim 7; specification: page 2, line 25)

According to another embodiment of the first aspect of the invention, the method comprises the further steps of coating a substrate with the reaction mixture, and curing the reaction mixture to form a lacquer coating on the substrate. (claim 8; specification: page 3, lines 6-9)

According to a second aspect of the invention, a product is provided with a lacquer coating, wherein the lacquer coating is obtained by the method comprising the step of adding silica particles to a reaction mixture comprising a first organosilane compound and a metal alkoxide under basic conditions, the method comprising the further steps of coating a substrate with the reaction mixture, and curing the reaction mixture to form a lacquer coating on the substrate. (claim 9; specification: page 3, lines 15-17)

According to a third aspect of the invention, a starting material composition for obtaining a lacquer composition comprises an organosilane compound, silica particles, a base, and a metal alkoxide. (claim 10; specification: page 1, lines 1-3, 26-28)

According to another embodiment of the third aspect of the invention, a lacquer composition comprises the reaction product of the starting material composition. (claim 11; specification: page 1, lines 3 and 4; page 2, lines 30 and 31)

GROUND(S) OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection to be reviewed on appeal are:

1. Claims 1, 2 and 4-11 are rejected under 35 USC 102(b) as being anticipated by Nogami et al. (U.S. patent 5,700,391) (herein 'Nogami');

2. Claims 4 and 5 are rejected under 35 USC 103(a) as being unpatentable over Nogami;

3. Claims 1-11 are rejected under 35 USC 103(a) as being unpatentable over JSR, taken with Nogami.

ARGUMENT

1. Are claims 1, 2 and 4-11 anticipated under 35 USC 102(b) by Nogami?

Claims 1, 2 and 4-11 are rejected under 35 USC 102(b) as being anticipated by Nogami.

Nogami discloses a liquid coating composition for use as an insulating film in a liquid crystal display. The coating composition comprises:

(a) a solution obtained by hydrolyzing a tetraalkoxysilane in an organic solvent in the presence of an alkaline catalyst, the solution containing particles having a particle size of from 10 nm to 80 nm;

(b) a hydrolyzed product, formed in the presence of an acid catalyst, of an alkoxysilane and/or a tetraalkoxy titanium;

(c) an aluminum salt; and

(d) a deposition inhibitor.

See, e.g., claim 1 of Nogami.

As explained, e.g., at col. 4, lines 21 et seq. of the

Brief

Brief following Notice of Appeal dated 23 January 2006

reference, silica particles are formed *in situ* as a product of the hydrolysis of solution (a). Moreover, solution (a) contains only an organosilane, not a metal alkoxide. Solution (b) may contain a metal alkoxide, but in the presence of an acid catalyst, not a basic catalyst.

In contrast, Appellant's claim 1 calls for adding silica particles to a reaction mixture, not forming the silica particles *in situ* as a product of hydrolysis. Moreover, Appellant's claim 1 calls for the reaction mixture to comprise an organosilane compound and a metal alkoxide under basic conditions.

In the Advisory Action dated 4 January 2006, following Appellant's response mailed 13 December 2005, the Examiner rejected the above argument on the basis that Appellant's claims do not preclude the formation of silica particles *in situ* prior to addition of the further addition to a solution.

However, claim 1 calls for the step of adding silica particles to a reaction mixture comprising a first organosilane compound and a metal alkoxide under basic conditions. Thus, Appellant's claims do in fact preclude the formation of silica particles *in situ*.

The Examiner has referred to the combination of solution (A) of Example 1 with solution (L) of Example 12 of Nogami as having been basic, since no acid was added. However, Example 12 states that aluminum nitrate hydrate was added to solution (L) (col. 10, lines 6 and 7). Aluminum nitrate is known to be acidic in solution. See, e.g., Malinckrodt Baker Inc.'s data sheet for the chemical, found at <http://www.jtbaker.com/msds/englishhtml/a2832.htm>, a copy of which is appended hereto as EXHIBIT 1/1.

Moreover, solution (L) clearly is an example of solution (b) of claim 1, characterized as a hydrolyzed product, formed

Brief

Brief following Notice of Appeal dated 23 January 2006

in the presence of an acid catalyst, of an alkoxysilane and/or a tetraalkoxy titanium.

In the Advisory Action, the Examiner rejected this argument on the basis that solution (A) is an alkaline silica particle sol, and no acid is added to solution (L), so that the combination of solutions (A) and (L) would be alkaline.

However, aluminum nitrate hydrate in solution is clearly acidic. Moreover, even if the combination of solutions (A) and (L) were basic, it would still fail to anticipate Appellant's claims, since, *inter alia*, silica particles are formed *in situ*, not added to the reaction mixture.

In the Advisory Action, the Examiner states that Nogami teaches that solution (2) (analogous to solution (L) of Example 12 and solution (b) of claim 1) could alternatively be formed in the presence of an alkaline catalyst, citing col. 5, lines 4-8.

However, the passage states that 'the hydrolyzed solution ... (2) may contain the hydrolyzed solution ... (1) formed in the presence of an alkaline catalyst, with no problem.' The passage clearly means that solution (1) is formed in the presence of an alkaline catalyst, not solution (2), and thus does not support the contention of the Examiner.

In the Advisory Action, the Examiner stated that aluminum nitrate is added as a deposition inhibitor, not as an acid catalyst. However, Example 12 states that 10g of N-methylpyrrolidone in 10.1 g of hexylene glycol is added as the deposition inhibitor. No reason is given for the addition of aluminum nitrate hydrate. See col. 10, lines 7 and 8.

In the Advisory Action, the Examiner stated that the aluminum salts include salts that are not acidic, citing col. 3, lines 32-35 of the reference. However, the cited passage actually states that aluminum salts to be used in the invention

Brief

Brief following Notice of Appeal dated 23 January 2006

include aluminium chloride, aluminium nitrate, aluminium sulfate, aluminium sulfamate, aluminium acetate, aluminium oxalate, and their basic acids (emphasis added).

In the Advisory Action, the Examiner stated that n-methylpyrrolidone is a known alkaline amine, citing Research Triangle Institute (Reference U).

However, the cited reference only describes the material as a solvent, and does not mention any alkaline property. Moreover, the reference clearly teaches that solution (2) is formed in the presence of an acid catalyst, so it must be assumed that n-methylpyrrolidone is not present in a sufficient quantity to create basic conditions.

Regardless of whether the conditions are acidic or basic, Nogami would still fail to teach or suggest Appellant's claimed method step, which requires the addition of silica particles to a reaction mixture of an organosilane and a metal alkoxide. Thus, Nogami does not anticipate Appellant's claims 1, 2 and 4-11, and the rejection is in error and should be reversed.

2. Are claims 4 and 5 unpatentable under 35 USC 103(a) over Nogami?

Claims 4 and 5 are rejected under 35 USC 103(a) as being unpatentable over Nogami, citing col. 3, lines 8-22, wherein it is disclosed that R^1 in formula (2) for an alkoxysilane may be the 3-glycidoxypropyl group (line 18).

Nogami teaches that the alkoxysilane is represented by the general formula $R_n^1 Si(OR^2)_{4-n}$, wherein R^1 represents a methyl group, ethyl group, propyl group, butyl group, pentyl group, hexyl group, heptyl group, octyl group, stearyl group, vinyl group, 3-chloropropyl group, 3-hydroxypropyl group, 3-glycidoxypropyl group, 3-aminopropyl group, 3-methacryloxypropyl group, phenyl group, etc.

It cannot fairly be said that Nogami teaches or even suggests the particular species claimed by Appellant in claims 4 and 5, in view of the extremely large number of possible groups and species disclosed, and the complete lack of guidance about which if any of these might be preferred over the others.

The only way that selection of the specific compositions claimed by Appellant would have been obvious to the skilled artisan would have been with the aid of hindsight from Appellant's own teachings, and such hindsight is not permitted in judging obviousness under section 103.

In the Advisory Action, the Examiner points to Hawley's Condensed Chemical Dictionary definition of γ -glycidyloxypropyltrimethoxysilane as a coupling agent.

However, Nogami does not teach or suggest that γ -glycidyloxypropyltrimethoxysilane is a preferred material, or even that coupling agents are preferred. In fact, Nogami does not even mention coupling agents.

Accordingly, claims 4 and 5 are not obvious over the teachings of Nogami, and the rejection is in error and should be reversed.

3. Are claims 1-11 unpatentable under 35 USC 103(a) as being over JSR, taken with Nogami?

Claims 1-11 are rejected under 35 USC 103(a) as being unpatentable over JSR, taken with Nogami.

JSR teaches a photocatalyst coating film and a method of making coating layers containing a photocatalyst. The method includes the steps of forming: an undercoating of a coating composition composed mainly of an organosilane component (a) and a polymer component (b) having a silyl group; and an overcoating of an organosilane component (a), a photocatalyst

Brief

Brief following Notice of Appeal dated 23 January 2006

(f) for the hydrolysis and condensation of organosilane components (a) and, if desired, a polymer component (b) having a silyl group.

JSR teaches that the component (f) is preferably selected from acidic compounds, alkali compounds, basic compounds, amine compounds and organic metallic compounds. See para. [0152].

Component (f) may also be provided as a combination of two or more substances. See para. [0162].

The organic metallic compounds include metal alkoxides.

The Examiner urges that JSR thus teaches the use of a metal alkoxide in combination with another compound which would have resulted in basic conditions.

However, JSR does not teach that a metal alkoxides should be used in conjunction with any specific one of the other listed compounds, and certainly not a particular compound which would result in basic conditions.

JSR includes both acidic and basic compounds, as well as other compounds in the list, and provides no guidance as to the selection of any one or more of these compounds over the others. Thus, one skilled in the art could just as readily select an acidic compound as a basic compound, which would be in direct conflict with Appellant's teachings and claims, which call for basic conditions.

Alternatively, one could use both acidic and basic compounds, which would result in neutral conditions, not basic conditions.

In summary, JSR simply provides a list of specific catalysts from which to chose, one of which happens to be a metal alkoxide, and the others include acidic compounds as well as basic compounds. There is absolutely no teaching or suggestion that a metal alkoxide be used under basic conditions.

Brief

Brief following Notice of Appeal dated 23 January 2006

Thus, it would not have been obvious to one skilled in the art to select a metal alkoxide in combination with a basic compound, or a compound capable of producing basic conditions.

As already set forth herein, Nogami teaches the use of a basic catalyst for the hydrolysis of tetraalkoxysilane, but teaches the use of an acidic catalyst for the hydrolysis of an alkoxysilane and/or a tetraalkoxy titanium. Thus, Nogami's teachings are in direct conflict with Appellant's teachings, and thus lead the skilled artisan away from Appellant's claimed invention.

The Examiner has deemed Appellant's arguments with respect to JSR unpersuasive, since all disclosures in a reference must be considered for what they teach, not just preferred embodiments or specific examples.

However, it is the Examiner who is cherry-picking the reference for arguments favorable to his position. Thus, the Examiner argues that basic conditions are taught, even though elsewhere in the reference, acidic conditions are taught. When the entire teachings of JSR are fairly considered, it must be concluded that JSR has no preference for either acidic or basic conditions. Thus, the skilled artisan is not led to one or the other. One must look outside the four corners of JSR for guidance in this respect. Looking to Nogami results in further conflicting teachings regarding acidic and basic conditions.

These conflicting teachings, rather than suggesting Appellant's invention, actually teach away from, and thus support the non-obviousness of Appellant's claims.

Accordingly, the rejection is in error and should be reversed.

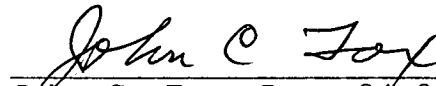
Brief

Brief following Notice of Appeal dated 23 January 2006

CONCLUSION

The rejections of the claims are in error for the reasons advanced above. Accordingly, Appellant respectfully requests that the Board reverse the rejections, and direct the Examiner to allow all the pending claims, and find the application to be otherwise in condition for allowance.

Respectfully submitted,



John C. Fox, Reg. 24,975
Consulting Patent Attorney
203-329-6584

APPENDIX

CLAIMS ON APPEAL

1. A method for producing a lacquer composition, the method comprising the step of adding silica particles to a reaction mixture comprising a first organosilane compound and a metal alkoxide under basic conditions, resulting in a lacquer composition containing silica particles.
2. A method according to claim 1, wherein the metal alkoxide is a zirconium alkoxide, an aluminum alkoxide, a titanium alkoxide or a mixture thereof.
3. A method according to claim 1, wherein the metal alkoxide is a metal diketonate.
4. A method according to claim 1, wherein the first organosilane compound is an epoxysilane.
5. A method according to claim 4, wherein the epoxysilane is 3-glycidyloxypropyltrimethoxysilane.
6. A method according to claim 1, wherein at least a second organosilane compound is added to the reaction mixture.
7. A method according to claim 6, wherein the second organosilane compound comprises a tetra-alkoxysilane.
8. A method as claimed in claim 1, comprising the further steps of coating a substrate with the reaction mixture, and

Brief

Brief following Notice of Appeal dated 23 January 2006

curing the reaction mixture to form a lacquer coating on the substrate.

9. A Product provided with a lacquer coating, wherein the lacquer coating is obtained by the method as claimed in claim 8.

10. A starting material composition for obtaining a lacquer composition, the starting material composition comprising an organosilane compound, silica particles, a base, and a metal alkoxide.

11. A lacquer composition comprising the reaction product of the starting material composition.

Appl. No. 10/047,024

Page 15 of 16

Brief

Brief following Notice of Appeal dated 23 January 2006

EVIDENCE APPENDIX

EXHIBIT 1/1

Appl. No. 10/047,024

Page 16 of 16

Brief

Brief following Notice of Appeal dated 23 January 2006

RELATED PROCEEDINGS APPENDIX

(none)

EXHIBIT 1/1


MSDS Number: A2832 ***** Effective Date: 02/22/06 ***** Supercedes: 11/12/03

MSDS

Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
223 Red School Lane
Phillipsburg, NJ 08865

Mallinckrodt
CHEMICALS



24 Hour Emergency Telephone: 908-459-8151
CHEMTREC: 1-800-424-4300

National Response in Canada
CAKUTEC: 613-699-4664

Outside U.S. and Canada
Chemtrec: 703-527-5387

NOTE: CHEMTREC, CAKUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-552-2537) for assistance.

ALUMINUM NITRATE

1. Product Identification

Synonyms: Aluminum (III) nitrate, nonohydrate (1:3:9); Nitric acid, aluminum salt; Aluminum nitrate, nonahydrate
CAS No.: 13473-90-0 (Anhydrous) 7784-27-2 (Nonahydrate)
Molecular Weight: 375.
Chemical Formula: Al(NO3)3 9H2O
Product Codes:
J.T. Baker: 0528
Mallinckrodt: 3172

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Aluminum Nitrate	13473-90-0	98 - 100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 2 - Moderate
Flammability Rating: 0 - None
Reactivity Rating: 3 - Severe (Oxidizer)
Contact Rating: 2 - Moderate
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES
Storage Color Code: Yellow (Reactive)

Potential Health Effects

Inhalation:

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Ingestion:

May cause gastroenteritis and abdominal pains. Purging and diuresis can be expected. Rare cases of nitrates being converted to the more toxic nitrites have been reported, mostly with infants.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact:

Causes irritation, redness, and pain.

Chronic Exposure:

Small repeated oral doses of nitrates may cause weakness, depression, headache, and mental impairment.

Aggravation of Pre-existing Conditions:

Persons with stomach diseases and infants are much more sensitive to nitrate ion toxicity.

4. First Aid Measures**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.

Get medical attention.

Skin Contact:

Wipe off excess material from skin then immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention.

5. Fire Fighting Measures**Fire:**

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. When heated, gives off oxygen thus increasing fire hazard.

Explosion:

Contact with oxidizable substances may cause extremely violent combustion. Some nitrates may explode when shocked, exposed to heat or flame, or by spontaneous chemical reaction.

Fire Extinguishing Media:

Use water or water spray only. Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. This oxidizing material can increase the flammability of adjacent combustible materials.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust. Keep combustibles (wood, paper, oil, etc.) away from spilled material. Cover spill with sodium bicarbonate or soda ash and mix.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Separate from incompatibilities. Separate from combustible, organic, or any other readily oxidizable materials. Do not store on wooden floors. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):

2 mg/m³ (TWA) soluble salts as Al

-ACGIH Threshold Limit Value (TLV):

2 mg/m³ (TWA) soluble salts as Al

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, a half facepiece particulate respirator (NIOSH type N95 or better filters) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece particulate respirator (NIOSH type N100 filters) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency, or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure.

Eye Protection:

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White crystals.

Odor:

Odorless.

Solubility:

Very soluble.

Specific Gravity:

No information found.

pH:

Aqueous solution is acidic.

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

135C (275F) Decomposes.

Melting Point:

73C (163F)

Vapor Density (Air=1):

No information found.
Vapor Pressure (mm Hg):
No information found.
Evaporation Rate (BuAc=1):
No information found.

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
Oxides of nitrogen.
Hazardous Polymerization:
Will not occur.
Incompatibilities:
Reducing agents, organic materials, cyanides, thiocyanides, acids, and heavy metals.
Conditions to Avoid:
Heat, shock, friction, incompatibles.

11. Toxicological Information

(9-hydrate): Oral rat LD50: 3671 mg/kg; Investigated as a reproductive effector.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Aluminum Nitrate (13473-90-0)	No	No	None

12. Ecological Information

Environmental Fate:
No information found.
Environmental Toxicity:
No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: ALUMINUM NITRATE
Hazard Class: 5.1
UN/NA: UN1438
Packing Group: III

Information reported for product/size: 300LB

International (Water, I.M.O.)

Proper Shipping Name: ALUMINUM NITRATE

Hazard Class: 5.1

UN/NA: UN1438

Packing Group: III

Information reported for product/size: 300LB

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Aluminum Nitrate (13473-90-0)	Yes	Yes	Yes	Yes
-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	--Canada--		Phil.
		DSL	NDSL	
Aluminum Nitrate (13473-90-0)	Yes	Yes	No	Yes
-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-	-----SARA 313-----		
	RQ	TPQ	List	Chemical Catg.
Aluminum Nitrate (13473-90-0)	No	No	No	Nitrate Cmpd
-----\Federal, State & International Regulations - Part 2\-----				
Ingredient	CERCLA	-RCRA-	-TSCA-	
		261.33	8 (d)	
Aluminum Nitrate (13473-90-0)	No	No	No	

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: No (Pure / Solid)

Australian Hazchem Code: 1S
Poison Schedule: None allocated.

WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 0 Reactivity: 0 Other: Oxidizer
Label Hazard Warning:
DANGER! STRONG OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT.
Label Precautions:
Keep from contact with clothing and other combustible materials.
Store in a tightly closed container.
Use only with adequate ventilation.
Avoid breathing dust.
Avoid contact with eyes, skin and clothing.
Wash thoroughly after handling.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In case of contact, wipe off excess material from skin then immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 3.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)